

Appl. No. 10/808,075
Amdt. Dated 1 December, 2006
Reply to Office action of 10 October, 2006

Listing of Claims

1. (currently amended) An inspection system for inspecting a three-dimensional volume, comprising;
at least one sensor coupled to a rolling object, wherein the at least one sensor is disposed on a non-contact outer region of the rolling object and at a pre-determined distance from a center of the rolling object;
wherein the at least one sensor is configured to generate signals representative of a condition of a region on the three dimensional volume; wherein the at least one sensor is an ultrasound sensor, and
a data analyzer configured to analyze the signals to determine the condition of the three-dimensional volume at specific locations therein.
2. (original) The inspection system of claim 1, wherein the at least one sensor is disposed at a periphery of the non-contact outer region of the rolling object.
3. (original) The inspection system of claim 1, wherein the at least one sensor comprises a plurality of sensors disposed at a pre-determined distance from the center of the rolling object, and wherein a sensor closest to a point of rolling is active.
4. (original) The inspection system of claim 1, wherein the at least one sensor is configured to receive signals indicative of a condition of the three-dimensional volume.
5. (original) The inspection system of claim 1, wherein the rolling object is stationary.
6. (original) The inspection system of claim 1, wherein the rolling object is in motion.
7. (original) The inspection system of claim 5, wherein the data analyzer is at a remote location.
8. (canceled)
9. (original) The inspection system of claim 1, wherein the rolling object comprises a wheel of a locomotive.
10. (original) The inspection system of claim 1, wherein the three-dimensional volume is a railway track.
11. (currently amended) A method for inspecting a three-dimensional volume, comprising;
translating a rolling object over a surface of the three-dimensional volume at a high speed, wherein the rolling object comprises at least one sensor coupled thereto, disposed on a non-contact outer region of the rolling object at a pre-determined distance from its center; wherein the at least one sensor is an ultrasound sensor, and

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sensing signals reflected from the three-dimensional volume as the rolling object translates over the three-dimensional volume.

12. (original) The method of claim 11, wherein the sensing occurs from a periphery of a non-contact region of the rolling object.

13. (original) The method of claim 11, further comprising receiving signals indicative of a condition of the three-dimensional volume.

14. (original) The method of claim 13, further comprising, analyzing the signals to determine the condition of the three-dimensional volume at specific locations in the three-dimensional volume.

15. (original) The method of claim 14, wherein the analyzing occurs in real-time.

16. (original) An inspection system for inspecting a railway track, comprising;
at least one sensor coupled to a wheel of a locomotive, wherein the at least one sensor is disposed on a non-contact outer region of the wheel and at a pre-determined distance from a center of the wheel; wherein the wheel is translating over the railway track at a high speed; wherein the at least one sensor is configured to generate a signal representative of a condition of a region on the railway track; wherein the at least one sensor is an ultrasound sensor, and
a data analyzer configured to analyze the signals to determine the condition of the railway track at specific locations therein.

17. (original) The inspection system of claim 16 wherein the at least one sensor is disposed at a periphery of the non-contact outer region of the wheel.

18. (original) The inspection system of claim 16, wherein the at least one sensor comprises a plurality of sensors disposed at a pre-determined distance from the center of the wheel object, and wherein a sensor closest to a point of rolling is active.

19. (original) The inspection system of claim 16, wherein the at least one sensor is configured to receive signals indicative of a condition of the railway track.

20. (original) The inspection system of claim 16, wherein the data analyzer is coupled to the locomotive.

21. (original) The inspection system of claim 16, wherein the data analyzer is at a remote location.

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22. (canceled)